



# Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for BEHRINGER DDX3216. You'll find the answers to all your questions on the BEHRINGER DDX3216 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual BEHRINGER DDX3216  
User guide BEHRINGER DDX3216  
Operating instructions BEHRINGER DDX3216  
Instructions for use BEHRINGER DDX3216  
Instruction manual BEHRINGER DDX3216

## OPERATING MANUAL

Version 1.1 November 2001

ENGLISH

## DDX3216

AUTOMATED DIGITAL MIXING CONSOLE



[You're reading an excerpt. Click here to read official BEHRINGER DDX3216 user guide](http://yourpdfguides.com/dref/2300302)  
<http://yourpdfguides.com/dref/2300302>

**Manual abstract:**

*g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.). Ventilation: The appliance should be situated so that its location or position does not interfere with its proper ventilator. For example, the appliance should not be situated on a bed, sofa rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings. Heat: The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat. Power source: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance. Grounding or polarization: Precautions should be taken so that the grounding or polarization means of an appliance is not defeated. Power-cord protection: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles and the point where they exit from the appliance. Cleaning: The appliance should be cleaned only as recommended by the manufacturer.*

*Non-use periods: The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time. Object and liquid entry: Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings. Damage requiring service: The appliance should be serviced by qualified service personnel when: s s s s the power supply cord or the plug has been damaged; or objects have fallen, or liquid has been spilled into the appliance; or the appliance has been exposed to rain; or the appliance does not appear to operate normally or exhibits a marked change in performance; or the appliance has been dropped, or the enclosure damaged. WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure--voltage that may be sufficient to constitute a risk of shock.*

*This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please, read the manual. Servicing: The user should not attempt to service the appliance beyond that which is described in the operating instructions. All other servicing should be referred to qualified service personnel. 2 FOREWORD Dear Customer, Welcome to the team of DDX3216 users, and thank you very much for expressing your confidence in BEHRINGER products by purchasing the DDX3216.*

*It is one of my most pleasant tasks to write this letter to you, because it is the culmination of many months of hard work delivered by our engineering team to reach a very ambitious goal: To produce a digital mixer, which fully satisfies your and our expectations and delivers a superior sound quality, easy operation and technical specifications. The task to design the DDX3216 certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. It also meant a lot of work and night shifts to accomplish this goal. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when everybody who participated in such a project can be proud of what we've achieved. It is our philosophy to share our joy with you, because you are the most important member of the BEHRINGER family. With your highly competent suggestions for new products you've greatly contributed to shaping our company and making it successful. In return, we guarantee you uncompromising quality (manufactured under ISO9000 certified management system) as well as excellent technical and audio properties at an extremely favorable price. All of this will enable you to fully unfold your creativity without being hampered by budget constraints. We are often asked how we manage to produce such highgrade devices at such unbelievably low prices.*

*The answer is quite simple: it's you, our customers! Many satisfied customers means large sales volumes enabling us to get better conditions of purchase for components, etc. Isn't it only fair to pass this benefit back to you? Because we know that your success is our success, too! I would like to thank the following people, whose help on "Project DDX3216" has made it all possible: s s all BEHRINGER users who made valuable contributions with their suggestions and ideas; Joost, Jean, Jos, Jörg, Thomas and Christian whose passionate work made the DDX3216 a really out-of-theordinary digital mixing console; Thorsten and Markus who designed this excellent manual; Ina and Volker for the sophisticated mechanics; everybody who contributed with great enthusiasm to this project. s s s My friends, it's been worth the trouble. Thank you very much, Uli Behringer CAUTION! + Please note that extreme volume levels can damage your hearing and/or headphones. Be sure to use appropriate volumes levels. 3 Ultra-flexible, automated 32-channel 16-bus digital mixing console s State-of-the-art 32-channel digital mixing console with 16 internal busses and 8 aux sends for extreme routing flexibility s High-power floating point DSP technology ensures virtually unlimited internal dynamic range s Ultra high-resolution 24-bit AKM® A/D and CRYSTAL® D/A converters s 12 ULN (Ultra Low-Noise) microphone inputs with analog inserts and switchable phantom power s 4-band fully parametric equalizer, low-cut filter, gate, compressor and phase inverter on all 32 channels with additional delay function on the first 16 channels s Four built-in effects processors with first-class algorithms, such as reverb, chorus, flanger, phaser, delay, pitch shifter, tremolo, lo-fi, LFO filter, ring modulator and more s 17 ultra-precise, low-noise 100-mm motorized ALPS® faders s Freely configurable built-in level meters on all channels and channel controls with LED rings, which control any of nine selectable parameters per channel s Fully-featured static and dynamic automation functions s Four freely assignable analog outputs on balanced 1/4" TRS connectors s Internal input/output patchbay for easy routing of complex signal configurations s Six master controllers for comfortable push-and-turn functionality s Large, easy-to-read LCD display with adjustable contrast s Synchronization to SMPTE, MTC or internal clock s Dither, word length and noise shaping adjustable for digital main outputs s Two slots for installation of optionally available digital interfaces based on AES/EBU (8 I/O), ADAT® (16 I/O) or TDIF formats (16 I/O) s MIDI and RS232 connectors allow communication with a PC or numerous other devices s Extensive MIDI implementation (MMC, program changes, control changes, MIDI sysex) s PC card slot for saving/loading various libraries and other settings s Free PC software for data transmission and management downloadable at [www.behringer.com](http://www.behringer.com).*



**[You're reading an excerpt. Click here to read official BEHRINGER DDX3216 user guide](http://yourpdfguides.com/dref/2300302)**

**<http://yourpdfguides.com/dref/2300302>**

TABLE OF CONTENTS 1. INTRODUCTION ..

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

. 10 1.1 Digital vs. analog .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
..... 10 1.

2 Concept .....

.....  
.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....

.....  
.....  
.....  
*. 10 1.2.1 Architecture .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... *10 1.*  
*2.2 Design concept and componentry ....*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*. 11 1.2.3 Open architecture .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... *11 1.*

*3 Before you begin .....*

.....  
.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

*.. 11 1.3.1 Shipment .....*

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

*... 11 1.3.  
2 Initial operation .....*

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

*..... 11 1.3.3 Warranty ...*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*... 11 2. CONTROL ELEMENTS AND CONNECTORS .*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*12 2.1 Connection interfaces and control elements on the top side of the DDX3216 ....*

.....  
.....  
.....  
.....

*.. 12 2.1.1 Microphone and line inputs 1-12 .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*. 12 2.1.2 Line inputs 13 to 16 ..*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....

.....  
.....  
.....

.....  
.....  
.....

. 12 2.1.3 Phantom power and 2-track inputs/outputs .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....

... 12 2.1.

4 Control room and phones sections .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

..... 13 2.2 The rear panel of the DDX3216 .

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

..... 13 2.2.

1 Control room, multi and main outputs .....

.....  
.....  
.....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

.... 13 2.2.2 Digital S/PDIF and wordclock inputs/outputs ....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... 13 2.

2.3 SMPTE and RS232 inputs .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

... 13 2.2.4 MIDI connections .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

.. 14 2.2.5 Power supply and fuse .....



.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

*.. 14 2.2.6 Option slots 1 and 2 .....*

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

*..... 14 2.3 PCMCIA card slot ...*

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

*..... 14 2.4 Channels and main mix .*

.....  
.....  
.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 14 2.

4.1 Channel strips ....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.. 14 2.4.2 Main Mix .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

15 2.5 Display ....

.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

*... 16 2.6 Snapshot automation: switches and displays .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*16 2.7 Left switch block .....*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

*... 16 2.7.1 Fader bank .....*

.....  
.....

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*. 16 2.7.2 Channe..*

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

.....  
*..... 24 5.2.1 Cathedral ...*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....

*. 24 5.2.2 Plate ..*

.....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*24 5.2.3 Small Hall ...*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*..... 25 5.2.4 Room ...*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*.. 25 5.2.5 Concert .....*

.....  
.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

..... 25 5.2.6 Stage ..

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

... 26 5.2.7 Spring Reverb .....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... 26 5.2.8 Gated Reverb .

.....  
.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.. 26 5.2.9 Stereo Delay .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 27 5.2.

10 Echo .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 27 5.2.11 Stereo Chorus ...

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....

. 27 5.2.12 Stereo Flanger ..

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

..... 27 5.2.13 Stereo Phaser .

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... 28 5.2.  
14 Pitch Shifter .....



.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

... 28 5.2.15 Delay .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

..... 28 5.  
2.16 Flanger .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....



.....  
.....  
.....

.....  
.....  
..... 29 5.2.  
*20 Autopan .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... 29 5.  
*2.21 Enhancer ....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
..... 29 5.2.

*22 Graphic Equalizer .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....  
.....

... 30 5.2.23 LFO Filter ...

.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

... 30 5.2.24 Auto Filter .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....

.. 30 5.2.25 LoFi .

.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
*30 5.2.26 Ring Modulator ...*

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*31 6. MONITOR SECTION AND LEVEL METERS .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*31 6.1 MONITOR menu .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
... *31 6.1.*

*1 Mono/stereo switching .....*

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

*... 31 6.1.*

*2 Monitor switching .....*

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

*.. 32 6.2 Solo function .....*

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

*. 32 6.2.1 Soloing input channels and FX returns .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

..... 32 6.2.2 Soloing aux, FX and master busses ...

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.... 32 6.3 Level meters .....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

... 32 6.3.1 Channel strip level meters .....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....

.....  
.....  
.....

..... 32 7. GROUPS, PAIRS AND COPY FUNCTIONS ..

.....  
.....  
.....  
.....

.....  
.....  
.....

..... 33 7.1 Fader and mute groups .

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

33 7.1.1 Creating and updating fader and mute groups ...

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.. 33 7.1.2 Viewing groups .....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....



.....

.....

.....

.....

.....

.....

..... 33 7.

*1.3 ISOLATE switch* .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 33 7.2 *Pair function* .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 34 7.2.1 *Pairing channels* ...

.....

.....

.....

.....

.....

.....

.....

.....



.....  
.....

..... 34 8. INPUT/OUTPUT ROUTING ....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.. 35 8.1 MULTI outputs .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....

.... 35 8.

1.1 Assigning signals to the MULTI outputs .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.. 35 8.2 Input/output routing .....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

*. 35 8.2.1 Input routing ..*

.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

..... 35 8.2.

*2 Output routing .....*

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

*.. 35 8.2.3 OUTPUT page in the I/O menu .*

.....  
.....  
.....





.....  
.....  
.....  
.....

.....  
.....  
.....  
..... 379.

*2 Using a PC card .....*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*.. 38 9.2.1 Formatting a PC card .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*.... 38 9.2.2 Saving files to a PC card .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....

*. 38 9.2.3 Loading files from a PC card .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*.. 38 9.2.4 Loading snapshot and library files ..*

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*.. 38 9.2.5 Loading ALL files .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*. 38 9.2.6 Deleting snapshot or library presets .....*

.....  
.....  
.....



.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... 38 10.  
*SNAPSHOT AUTOMATION* .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

.... 38 10.1 10.2 10.3 10.4 10.5 *Memory contents of a snapshot preset* .

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

.... 39 *Snapshot automation control elements* .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... 39 *Loading snapshots* ...

.....  
.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

*.. 39 Snapshot Safe function .....*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*. 39 Saving snapshots .....*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

*.... 39 II.*

*DYNAMIC AUTOMATION .....*

.....  
.....  
.....

.....  
.....  
.....  
.....  
.....

.....  
.....  
.. 39 11.1 Introduction ..

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

. 39 11.2 Overview ...

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

40 11.2.1 Absolute mode .....

.....

.....

.....

.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*40 11.2.2 Relative mode .....*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....

*.. 40 11.2.3 Various operating modes .*

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*..... 40 11.2.4 Snapshots and dynamic automation ..*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....

.....  
.....

.....  
.. 41 11.2.5 Global automation switches .

.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

. 41 11.2.6 AUTO/REC switches in the channel strips .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

..... 41 11.3 DYNAMIC AUTOMATION menu .

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

..... 41 11.3.1 AUTOM.

page .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*. 41 11.3.2 SETUP page ..*

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*..... 42 11.3.3 RECORD page ...*

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*..... 42 11.4 Dynamic automation in practice ....*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....







.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

..... 44 12.3.1 CONFIRMATION ON OVERWRITE ..

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... 44 12.3.2 CHANNEL MUTE AFTER FADER ..

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

... 44 12.3.

3 AUTOMATION AUTO SAVE .....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....

.....  
.....

.....  
*45 12.3.4 MAIN CONTROL AS AUX/FX MASTER ...*

.....  
.....

.....  
.....

.....  
.....

.....  
.....

.....  
.....

.....  
.....

..... *45 12.*  
*3.5 DISPLAY FOLLOWS CHANNEL CONTROL ....*

.....  
.....

.....  
.....

.....  
.....

.....  
.....

.....  
.....

..... *45 12.*

*3.6 DISPLAY FOLLOWS AUTOMATION SWITCHES ....*

.....  
.....

.....  
.....

.....  
.....

.....  
.....

.....  
.....

..... *45 12.3.*

*7 ONLY ODD-EVEN PAIRING .....*

.....  
.....

.....  
.....

.....  
.....

.....  
.....

.....  
.....

.....  
.....

.....  
.....

..... *45 12.*

*3.8 GROUPS FADERPAGE BOUND .....*



.....  
.....  
.....

..... 45 13.1.1 Timecode ..

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....

.... 45 13.2 MACHINE CONTROL page in MIDI menu .....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... 45 13.2.1 MIDI machine control ..

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

..... 45 13.3 RX/TX page in MIDI menu ...

.....  
.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

... 46 14. EXPANSIONS .

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.. 47 14.2 ADAT® .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
*47 14.3 TDIF-1 ....*

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*.. 47 8 15. APPLICATIONS ..*

.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

*48 15.1 Studio setups .....*

.....



.....  
.....  
.....  
.....  
.....  
.....  
.....

..... 49 16. SPECIAL FUNCTIONS .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... 50 16.1 Updating the DDX3216 operating system ..

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... 50 16.1.

1 OS update with PC software .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... 50 16.1.2 OS update with PC card .

.....  
.....  
.....  
.....





51 17.2 Audio connections .....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

..... 51 17.2.

1 Analog connections .....

.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

51 17.2.2 Digital connections (S/PDIF) ..

.....  
.....

.....  
.....  
.....

.....  
.....  
.....

.....  
.....  
.....

51 17.3 MIDI .....

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*. 52 18. APPENDIX ...*

.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*.. 53 18.1 MIDI Implementation .....*

.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
.....  
.....

.....  
.....  
*. 53 18.2 MIDI Control Changes ...*

.....  
.....  
.....  
.....

..... 54 19. SPECIFICATIONS .

..... 55 20. WARRANTY ..

..... 56 9 1. INTRODUCTION Thank you very much for expressing your confidence in BEHRINGER products by purchasing the DDX3216. The BEHRINGER DDX3216 is an enormously powerful and fullfeatured digital mixing console based on 24-bit technology. Despite its compact size, the standard version of this console offers 16 complete inputs, four aux sends, four effect sends, 16 busses, four on-board effects processors and comprehensive routing options.

Optionally available expansion modules (AES/EBU, ADAT® and TDIF) allow you to upgrade your DDX3216 with 32 digital inputs and 32 digital outputs, so as to connect four digital 8-track recorders or 24-track hard-disk recording systems. The twelve ultra low-noise microphone preamplifiers featuring 24-bit CRYSTAL® A/D converters can be enhanced by means of additional ADAT® or TDIF-compliant 8-channel A/D converters to make sure that your DDX3216 provides enough connection options even for major-scale live applications. What is more, the DDX3216 features static and dynamic automation functions ("snapshots") to record parameter changes. Your DDX3216 is equipped with a large number of ergonomically placed control elements, which you can use to operate a variety of functions in a very intuitive way. For example, the console has 17 faders controlling the levels of 32 input channels, 16 master busses, four aux sends and four internal effect sends as well as eight effect returns from the on-board effects processors. The knob, or channel controller on each channel is even more flexible, as it is always assigned to the same channel as the fader below it, but it can control any of nine different parameters on that channel--channel pan or the send level for one of the four aux or four FX sends. The display with adjustable contrast gives you a clear picture of various functions, such as EQ, dynamics, routing, delay, etc. The six master controllers below the display control the parameters as shown in the display.

[You're reading an excerpt. Click here to read official BEHRINGER](#)



[DDX3216 user guide](#)

<http://yourpdfguides.com/dref/2300302>

To give you maximum flexibility and enable you to work quickly and intuitively with the DDX3216, we designed the user interface so that it resembles that of an analog console. The faders made by ALPS® are motorized, i.

e. are automatically set to the correct position. The channel controllers have LEDs around them showing their current position. The switches above the faders are always assigned to the same channel as their faders, and give you direct access to the solo, mute and select functions. In addition, there is even a dedicated automation switch per channel.

So, even when the display is used for other control functions, up to six parameters can be controlled simultaneously using the rotary controls or master controllers. You will find that the user interface of your DDX3216 can be operated even more quickly than that of a huge studio console with hundreds of controls! 2. implemented in an analog console are determined by the hardware used, so that later modifications and updates are usually impossible. The functionalities of digital mixing consoles, however, can be expanded with the help of software updates. The mixing results become "predictable": unlike analog consoles, which use a sophisticated set of analog components to realize a specific audio result, digital signal processors always give you predictable results, because audio signals are processed with the help of so-called algorithms (calculation rules) based on mathematical formulas and equations. The designers of such algorithms can use a wealth of sound possibilities greatly exceeding those of analog circuits and devices. No noise generation during signal processing: since the entire signal processing takes place in the mathematical domain, once the signal has been converted from analog to digital in the A/D converter, no further noise will be added in the console. The only noise sources in digital consoles are preamplifiers and A/D converters of poor quality, and of course noise-affected signals on the input will be processed with all the noise components they contain, while "clean" signals will stay clear throughout the entire console. Analog consoles, however, always suffer from the basic noise floor produced by their componentry, which inevitably adds noise to the audio signal. Since all parameters and operating steps are realized in the form of discrete values, they can be easily stored and automated--in the analog world this feature can be provided by sophisticated and costly consoles only. 3. 4. A weak point of many digital consoles is their operating concept. Often, the entire console and all its functions must be operated from just a few control elements. As you will see in this manual, it can be done differently.

The DDX3216 allows you to operate each single parameter quickly and intuitively using separate and dedicated controls. Seeing is believing! 1.2 Concept 1.2.1 Architecture In its basic version, the DDX3216 is equipped with 16 (+ 2) analog inputs and ten analog outputs, and can be expanded to 32 inputs and 32 outputs (16 at the same time). Each expansion card contains 8 or 16 digital inputs/outputs for the integration of digital multi-track or hard-disk recorders, samplers, MIDI modules, external digital effects or additional A/D and D/A converters. Expansion cards are available for the standard digital formats AES/EBU (8 I/O), ADAT® (16 I/O) and TDIF (16 I/O). The analog interface section of your DDX3216 comprises 12 mic/line inputs; inputs 13-16 are exclusively designed for linelevel signals. An analog 2-track input allows you to connect a 2-track master recorder and can be assigned to inputs 15 and 16.

The main (XLR, balanced), control room (1/4" TRS, balanced), phones and four multi outputs (1/4" TRS, balanced) are analog.

The multi outputs are wired to busses aux 1-4, but can be used individually for any one of the 28 busses available on the DDX3216 (bus 1-16, aux 1-4, FX 1-4, solo L+R and main L+R). The standard configuration of your DDX3216 also includes a digital S/PDIF input/output. The digital input is fitted with a sample rate converter to avoid synchronization problems, and can replace input channels 13/14. The digital output carries a digital version of the main output, e. g. to connect a DAT recorder. When fitted with one of the optional I/O modules, inputs 17-32 become really useful, as they have all of the functionalities of inputs 1-16, except for the channel delay feature. Also, with an I/O module fitted, full use can be made of the console's 16 busses and comprehensive routing facilities. + This manual first describes the terminology used, so that you can fully understand the DDX3216 and its functions. Please read the manual carefully and keep it for future reference.

1.1 Digital vs. analog For quite a long time, the mixing of audio signals has been the domain of analog mixing consoles. Not only were digital consoles extremely costly and hence beyond the means of ambitious amateurs or free-lance owners of project studios, but they were also looked down upon for lacking the warmth of analog devices. While digital technologies have found widespread use in effects processors over the past few years, their prices have gone down and the concepts of digital mixing consoles have been reconsidered. Latest research findings in digital signal processing have made it possible to improve the quality of digital consoles to such an extent that they are now challenging their analog competitors. Which benefits do digital mixing consoles offer? 1. Flexibility in signal processing and routing: since most of the signal processing is done in the software domain, designers can let their imagination run free.

The functions 10 1. INTRODUCTION 1.

2.2 Design concept and componentry The philosophy behind BEHRINGER products guarantees a no-compromise circuit design and employs the best choice of components. The operational amplifiers used in the DDX3216 are exceptional. They boast extreme linearity and very low distortion characteristics. The 24-bit AKM® A/D and CRYSTAL® D/A converters feature excellent technical specifications and audio properties, reproducing even the tiniest details of the analog input signal. All computations are performed by four state-of-the-art SHARC® DSPs made by ANALOG DEVICES ®. The professional motorized faders made by ALPS® are of excellent quality and offer you maximum precision as well as smooth and low-noise operation--even after many years of use--so as to reproduce level settings with highest accuracy. To complement this design the choice of components includes low-tolerance resistors and capacitors and several other stringently selected elements. The DDX3216 uses SMD technology (Surface Mounted Device). These subminiature components adapted from aerospace technology allow for an extreme packing density to further improve the console's overall reliability. Additionally, your DDX3216 was manufactured in compliance with the ISO9000 certified management system.



[You're reading an excerpt. Click here to read official BEHRINGER DDX3216 user guide](http://yourpdfguides.com/dref/2300302)  
<http://yourpdfguides.com/dref/2300302>

+ Please ensure that only qualified personnel install and operate the DDX3216. During installation and operation, the user must have sufficient electrical contact to earth, otherwise electrostatic charges might affect the operation of the unit. 1.3.

3 Warranty Please take the time to fill out and return the warranty card within 14 days after the date of purchase, so as to be entitled to benefit from our extended warranty. Or use our online registration option available on the World Wide Web at [www.behringer.com](http://www.behringer.com). 1.

2.3 Open architecture As the operating system (firmware) of your DDX3216 is stored in a flash ROM, you can update the OS at any time from a personal computer or PC card. We are committed to improving the DDX3216 operating software, working on new algorithms and considering your ideas and suggestions. The resulting software updates will be made available free of charge on the Internet, so as to ensure that your DDX3216 will never outdate. What is more, we will establish a forum on our web site at [www.behringer.com](http://www.behringer.com), from where you can download a wealth of additional information on your DDX3216 (e. g. user manual updates, presets for various libraries, etc.).

Also, you can share your experience with other users and keep yourself informed about latest modifications and upgrades for your DDX3216. 1.3 Before you begin 1.3.1 Shipment Your DDX3216 was carefully packed in the factory and the packaging is designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage, which may have occurred during transit. + If the unit is damaged, please do not return it to BEHRINGER, but notify your dealer and the shipping company immediately, otherwise claims for damage or replacement may not be granted. Shipping claims must be made by the consignee. 1.3.

2 Initial operation Be sure that there is enough space around the unit for cooling and please do not place the DDX3216 on high-temperature devices such as radiators or power amps etc. to avoid overheating. Please use the enclosed power cord to connect the unit to the mains. The cord complies with all applicable safety standards. Blown fuses may only be replaced by fuses of the same type and rating.

+ Please note that all units must be grounded properly. For your own safety, you should never remove any ground connectors from electrical devices or power cords, or render them inoperative. 1. INTRODUCTION 11 2. CONTROL ELEMENTS AND CONNECTORS This chapter describes the various control elements of your DDX3216.

Analog controls and connectors will be discussed in full detail. from -10 dB to +40 dB for the 1/4" TRS input. 2.1.2 Line inputs 13 to 16 Inputs 13-16 are on balanced 1/4" TRS connectors and can be used for line-level signals only. 2.1 Connection interfaces and control elements on the top side of the DDX3216 The connectors and controls for the analog inputs are located in the upper section of the DDX3216. Ex factory, the analog inputs are assigned to channels 1-16. 2.1.

1 Microphone and line inputs 1-12 The inputs 1-12 are mic/line inputs and have analog insert points (ISR = Insert Send Return). Fig. 2.2: Connectors and controls for inputs 13-16 LINE IN The line inputs are on balanced 1/4" TRS connectors. SIG and CLIP LEDs These LEDs monitor the analog signal level after the insert point. When gain is in center position, the SIG LED lights at approx. -36 dBu (unity gain) indicating the presence of audio. The CLIP LED lights at approx. +10 dBu (unity gain) and warns you of signal distortion. GAIN Use the GAIN control to adjust the line input signal gain. The setting range is from -20 dB to +20 dB. Fig. 2.1: Connectors and controls of analog mic/line inputs MIC The microphone inputs are on balanced XLR connectors and feature a switchable phantom power supply for condenser mics (cf. chapter 2.

1.3 "Phantom power and 2-track inputs/outputs"). LINE IN The line inputs are on balanced 1/4" TRS connectors and function in parallel to the microphone inputs. INSERT The insert points are on 1/4" TRS connectors (tip = send, i. e.

connection with input of external device; ring = return, i. e. connection with output of external device; shaft = ground, cf. chapter 17.2.1 "Analog connections"). In this way, you can insert analog signal processing devices before the channel's A/D converters. Use commercially available insert cables (1/4" TRS on 2 x 1/4" phone connectors) for this connection. Insert points are very useful when you need to process channel signals with dynamic processors or equalizers. The insert points can also be used as tape sends to a multi-track recorder.

PAD This attenuation switch (PAD) for line-level signals (or microphones with very high output levels) reduces the input gain by 20 dB. SIG and CLIP LEDs These LEDs monitor the analog signal level after the insert point. When gain is closed, the SIG LED lights at approx. -46 dBu (mic)/-23 dBu (line) indicating the presence of audio. The CLIP LED lights at approx. 0 dBu (mic)/+23 dBu (line) and warns you of signal distortion. + On the S/PDIF page in the I/O menu, you can assign the inputs of channels 13/14 to the digital S/PDIF input. When S/PDIF is selected as the signal source for channels 13/14, the "normal" channel input signals are replaced by the signals present at the digital S/PDIF input. 2.1.

3 Phantom power and 2-track inputs/outputs Fig. 2.3: Phantom power and 2-track inputs/outputs The +48 V phantom power required for condenser mics can be activated separately for channels 1-6 and 7-12. The associated switches light up when phantom power is on. CH.

1-6 This switch activates the phantom power supply for microphone channels 1-6. CH. 7-12 This switch activates the phantom power supply for microphone channels 7-12. + Make sure that the CLIP LED does not light up. GAIN Use the GAIN control to adjust the mic/line input signal gain.

The setting range is from +10 dB to +60 dB for the XLR input, and + Please mute your audio system before you activate the phantom power supply, so as to prevent switchon thumps from being passed on to your monitor speakers and/or headphones. 12 2. CONTROL ELEMENTS AND CONNECTORS TAPE IN

These RCA connectors (nominal level: -10 dBV) are used to return the signals from a stereo master recorder. 2.2.2 Digital S/PDIF and wordclock inputs/outputs + Press the 2 TK TO CTRL R switch to monitor the TAPE INPUTS via the control room and/or phones outputs. Fig. 2.6: Digital S/PDIF and wordclock inputs/outputs DIGITAL COAXIAL OUT The digital coaxial output (RCA) provides the MAIN MIX signal in a digital S/PDIF format. The parameters word length and dither for the digital output can be adjusted on the S/PDIF page in the I/O menu.

DIGITAL COAXIAL IN This RCA connector allows you to feed in S/PDIF signals, with a sampling rate between 32 and 50 kHz. The input is fitted with a sample rate converter, so as to be able to feed in digital signals with a sample rate other than that used by the DDX3216.



**You're reading an excerpt. Click here to read official BEHRINGER**

**[DDX3216 user guide](http://yourpdfguides.com/dref/2300302)**

**<http://yourpdfguides.com/dref/2300302>**

The S/PDIF input can be routed exclusively to channels 13/14, replacing the input signal connected to these inputs (see S/PDIF in I/O menu). If the DDX3216 is operated via its digital connectors, all digital devices connected to the console must be synchronized to a common wordclock rate. With an (optionally available) I/O module installed and devices such as digital multi-track recorders connected via digital leads, one of these devices must be defined as the wordclock master providing the clock rate for all other units. For this purpose, the DDX3216 generates internal clock rates of 44.1 or 48 kHz. In slave mode the console can be clocked via its wordclock input or from an device connected to an I/O module. The wordclock signal source is adjusted on the FS CLOCK page in the SETUP menu. Wordclock signals are usually distributed in a network configuration, i.

e. using 75-ohm coaxial cables, BNC-T adapters and terminating resistors. WORDCLOCK OUT The word clock output is on a BNC connector and provides a wordclock signal with the sample rate used by the console (TTL level square wave). WORDCLOCK IN The wordclock Input is on a BNC coaxial connector and accepts wordclock signals between 40 and 50 kHz. TAPE OUT These RCA connectors are wired in parallel to the MAIN OUT and provide the main mix signal with a nominal level of -10 dBV (unbalanced).

TO CH 15/16 This switch sends the signal present at the TAPE IN connectors to channels 15/16, and disables line inputs 15/16. 2.1.4 Control room and phones sections Fig. 2.

4: Control room and phones sections 2 TK TO CTRL R Press this switch to route the signal applied to the TAPE IN to the control room and phones outputs. LEVEL (control room) This LEVEL control adjusts the control room output level. + You can also select other signals in the MONITOR menu (see chapter 6.1 "MONITOR menu") and route them to the control room output. PHONES connector Connect your headphones to this 1/4" TRS connector. The PHONES signal and the CONTROL ROOM signal are identical. LEVEL (phones) This LEVEL control determines the headphones volume and works independently of the control room LEVEL control. 2.2 The rear panel of the DDX3216 2.2.

1 Control room, multi and main outputs + If you encounter problems with the reception of word clock signals, you can connect a 75-ohm resistor to the wordclock input of the DDX3216. 2.2.3 SMPTE and RS232 inputs Fig. 2.5: Control room, multi and main outputs CONTROL ROOM OUTPUTS Normally, the control room output is connected to the monitor system set up in the control room and provides the stereo main mix or specific solo signals. The outputs are on balanced 1/4" TRS connectors with a nominal level of +4 dBu. MULTI OUTPUTS The MULTI outputs can carry any of the 28 bus signals in your DDX3216, i. e. aux outputs, FX sends, stereo main mix, stereo solo bus or one of the 16 master bus signals.

The outputs must be assigned accordingly on the MULTI page in the I/O menu (default: aux sends 1-4). The MULTI outputs are on balanced 1/4" TRS connectors with a nominal level of +4 dBu. MAIN OUTPUTS The MAIN outputs provide the MAIN MIX signal and are on balanced XLR connectors with a nominal level of +4 dBu. Fig. 2.

7: SMPTE and RS232 inputs SMPTE INPUT The timecode input (XLR-3) accepts SMPTE timecode signals for the control of the console's dynamic automation. Usually, such signals are provided by a computer, video or multi-track recorder. The frame rate and incoming timecode are displayed on the SETUP pages in the MIDI and DYNAMIC AUTOMATION menus. RS232 I/O The 9-pin RS232 connector enables the DDX3216 to communicate with a computer. For example, you can save and load files, or update the DDX3216 operating system.

Of course, you will find an appropriate serial cable (1:1) for the connection to the serial interface of your personal computer included with your DDX3216. 2. CONTROL ELEMENTS AND CONNECTORS 13 2.2.4 MIDI connections 2.3 PCMCIA card slot Fig. 2.8: MIDI connections The MIDI connectors on the rear of the console are on internationally standardized 5-pin DIN jacks. Use MIDI cables to connect your DDX3216 to other MIDI equipment. Such cables are commercially available, their length should not exceed 50 feet.

The data are transmitted via electrically isolated optocouplers. MIDI IN: use this input to receive MIDI control data. MIDI THRU: this connector provides an identical copy of the MIDI signal received at the MIDI IN jack. MIDI OUT: use this output to transmit data to a connected computer or other MIDI equipment. Fig. 2.11: PCMCIA card slot The PCMCIA card slot is used to exchange data between the DDX3216 and a PC card equipped with a flash memory. + Only use PC cards of the "5 V ATA Flash Card" type (any memory capacity permitted). 2.4 Channels and main mix The DDX3216 features 16 identical channel strips controlling all of the 32 inputs, 16 master busses, four aux and four FX sends as well as eight returns from the built-in effects devices. For this purpose, your DDX3216 has four fader banks with 16 channels each. The MAIN fader always controls the stereo main mix. 2.2.5 Power supply and fuse Fader bank CH 1-16 Fig.

2.9: Power supply and fuse POWER switch Use the POWER switch to turn the DDX3216 on and off. FUSE HOLDER Use the enclosed IEC power cord to connect the unit to the mains. It complies with all applicable safety standards. Blown fuses must always be replaced by fuses of the same type and rating. IEC MAINS CONNECTOR Use this mains connector and the enclosed power cord to connect the unit to the mains. SERIAL NUMBER Please take the time to fill in and return the warranty card within 14 days after the date of purchase, so as to benefit from our extended warranty. Or use our online registration option available on the World Wide Web at [www.behringer.com](http://www.behringer.com). Channels Channels 1 to 16 Channels 17 to 32 Busses 1 to 16 Aux/FX sends and FX returns CH 17-32 BUS OUT 1-16 AUX/FX Tab. 2.1: Four fader banks and associated channels 2.4.1 Channel strips 2.

2.6 Option slots 1 and 2 Fig. 2.10: Option slots 1 and 2 These two option slots allow you to expand your DDX3216 by means of two optionally available expansion cards, which are equipped with various digital connectors (AES/EBU, ADAT® and TDIF). Fig. 2.10 shows a TDIF module installed in slot 1. The second slot is not in use and has a blank panel attached. Fig. 2.

12: Channel strip Each of the 16 channel strips has the following firmly assigned control elements: Channel fader The channel faders are 100-mm motorized faders made by ALPS®. Their function depends on what is selected in the fader banks. + A detailed installation manual is enclosed with each optionally available expansion card. 14 2. CONTROL ELEMENTS AND CONNECTORS Channel level meter Each fader has a channel level meter assigned to it. Depending on the active fader bank, this meter reads the pre-fader or preprocessing levels (inputs), or the post-fader output level (outputs such as bus, aux and FX).



**You're reading an excerpt. Click here to read official BEHRINGER**

**[DDX3216 user guide](http://yourpdfguides.com/dref/2300302)**

**<http://yourpdfguides.com/dref/2300302>**



Normally, the channel meter follows the fader bank settings and reads the level of its associated fader. However, it can also display the levels of a fader bank preset in the METERS menu. For example, the meters can read channels 1-16, while the faders actually control channels 17-32. Always use the highest levels possible, but make sure that the red CLIP LED does not light up.

Clipping can be the source of unpleasant digital distortion in the input/output sections of a digital console, where the signals are converted into analog or fixedpoint digital signals. CHANNEL CONTROL The channel controller above the faders is basically assigned to the same channel as the fader located below it. Depending on what has been selected in the CHANNEL CONTROL bank, it can adjust up to nine different parameters of the channel (pan or the send level for one of the four aux or FX sends). The eleven LEDs grouped around the controller read its current position. The channel controller functions are not enabled for all channels in the various fader banks. For example, the bus output have no aux, FX send or pan controls. In this case, the channel controllers are inoperative, their LEDs do not light up. SELECT switch Use the SELECT switch to select a channel for on-screen editing, and for pairing or grouping several channels. Normally, only one channel can be selected at a time. When you select a channel that belongs to a channel pair, the SELECT switch of the other channel starts flashing.

Now, all changes made to the selected channel will affect the other channel as well. When you select a channel that belongs to a group of channels, only the fader setting will be transferred to the other group channels. AUTO/REC switch The AUTO/REC button controls the dynamic automation (see chapter 11 "DYNAMIC AUTOMATION"). When automation is off (AUTOMATION menu via SETUP switch), the AUTO/REC switch activates the SNAPSHOT SAFE function, which is indicated by a flashing green LED in the switch. A channel in SNAPSHOT SAFE mode remains unaffected when you load a stored snapshot (RECALL). SOLO switch The SOLO switch sends the signal of the selected channel to a solo bus that is routed to the control room and/or phones outputs. The MAIN MIX signal is unaffected by this switch. Both PFL (pre-fader listening) and AFL (after-fader listening) modes are available and displayed in the MONITOR menu. For solo to function, the SOLO ENABLE switch in the main channel strip must be pressed and the 2 TK TO CTRL R switch must be off. All channels (even those muted) can be soloed.

The solo function is available for all input channels, effect returns, master busses and aux/FX masters. Any number of input channels and FX returns can be routed simultaneously to the solo bus, but only two output channels (master bus and aux/ FX master). When you select a third channel, the first channel soloed will be disabled automatically. More information on the solo function can be found in chapter 6.2 "Solo function".

MUTE switch The MUTE switch mutes the channel. The GROUP function allows you to create MUTE groups. Muted channels can still be soloed. The MUTE switch has two operating modes: pre or postfader (PREFS page in SETUP menu). When CHANNEL MUTE AFTER FADER is on, the MUTE switch is effective only on the post-fader send signals or the post-fader bus routing. When CHANNEL MUTE AFTER FADER is off, all sends and the entire bus routing (both pre and post-fader) are muted. 2.4.2 Main Mix Fig. 2.13: MAIN fader

The MAIN fader controls the level of the stereo main mix, which is also indicated by the MAIN meter in the display. CHANNEL CONTROL The channel controller in the MAIN strip works like the channel controllers in the channel strips. It controls the BALANCE of the left/right main signals. As long as MAIN CONTROL AS AUX/FX MASTER is activated on the PREFS page in the SETUP menu, the channel controller additionally adjusts one of the aux/FX master send levels. Use one of the CHANNEL CONTROL buttons in the left switch block in order to select the relevant aux/FX master send (see chapter 12.

3.4 "MAIN CONTROL AS AUX/FX MASTER"). SELECT switch The SELECT switch selects the MAIN strip for on-screen editing. AUTO/REC switch The AUTO/REC switch controls the dynamic automation. When automation is off, the AUTO/REC switch activates the SNAPSHOT SAFE function, which is indicated by a flashing green LED in the switch. A channel in SNAPSHOT SAFE mode remains unaffected when you load a stored snapshot (RECALL). SOLO ENABLE switch The SOLO ENABLE switch activates the solo function, which replaces the main mix signal in the control room or phones outputs by the selected channel signal. When SOLO ENABLE is off, the solo function is not available, i. e. pressing a SOLO switch in an input/output channel will have no effect.

When SOLO ENABLE is on, the solo bus is routed to the control room bus, as soon as you press one of the channel SOLO switches; the LED of the SOLO ENABLE switch starts flashing. Pressing SOLO ENABLE again will cancel all solo settings. + When the 2 TK TO CTRL R switch is pressed, the solo signal is not routed to the control room output. MON -20 dB switch This switch reduces the level of the signal sent to the control room output by 20 dB. When the 2 TK TO CTRL R switch is pressed, this function has no effect on the control room signal.

2. CONTROL ELEMENTS AND CONNECTORS 15 2.5 Display RECALL Recalls the snapshot stored in the selected automation memory. PRESET NUMBER display This display reads the number of the current preset or the one that has been selected for loading. After selection with the PREVIOUS and NEXT switches, the display shows a decimal point indicating that the preset has not been recalled yet.

Press the RECALL switch to confirm your selection; the point in the display disappears. Fig. 2.14: Display with control elements Many functions of your mixing console are controlled via the display, including the general setup, channel processing and the built-in effects processors. By pressing a switch in the switch block, you can display whole groups of associated menu pages. Each group has a menu bar on the upper right side, and each single menu page has a tab along the top left part of the display. A thick black line surrounding the tab indicates the active display page. Press the keys in the switch block to the left of the display or the PREVIOUS and NEXT switches to scroll through the available pages. The contrast knob on the right below the display allows you to adjust the display brilliance to suit the lighting conditions and viewing angle. Master control The six master controllers just below the display operate the controls depicted in the display.

They function like the channel controllers, but feature an additional function which is enabled by pressing the respective controller. Navigation switches Use the PREVIOUS and NEXT switches to move from page to page within one specific menu. Another way to navigate through the various menu pages is to repeatedly press a switch from the switch block located to the left of the display.



[You're reading an excerpt. Click here to read official BEHRINGER DDX3216 user guide](http://yourpdfguides.com/dref/2300302)  
<http://yourpdfguides.com/dref/2300302>

The CANCEL switch activates the CANCEL button in various menu pages and dialog boxes, while the ENTER switch performs different functions in the menu pages and dialog boxes. Fig. 2.16: MAIN/MONITOR level meters MAIN/MONITOR level meter Depending on the current configuration, this level meter displays the MAIN or MONITOR bus levels. When the solo function is enabled, you can also meter the level of the solo bus. 2.7 Left switch block 2.6 Snapshot automation: switches and displays Fig. 2.17: Left switch block 2.7.1 Fader bank Fig.

2.15: Snapshot automation Almost all settings for the control of audio parameters, except for the analog level controls, can be stored in any of the 128 snapshot automation memories. The switches and LED display in the snapshot automation section give you direct access to these memory locations. Further information on this can be found in chapter 10 "SNAPSHOT AUTOMATION". NEXT Selects the next highest automation memory, and displays the SNAPSHOT AUTOMATION menu.

PREVIOUS Selects the next lowest automation memory, and displays the SNAPSHOT AUTOMATION menu. STORE Displays the STORE SNAPSHOT menu, in which you can name and store the current settings of the console. Fig. 2.18: Fader bank The 16 channel strips are used to control all 32 inputs and 16 master busses, the four aux and four effect masters as well as the eight returns from the built-in effects units. To this end, your console has four fader banks with 16 channel strips each. The master fader always controls the stereo main mix. The fader bank switches (CH 1-16, CH 17-32, BUS OUT 1-16 and AUX/FX) select the active fader bank. The switches and controls in the channel strips are always assigned to the same channel as the faders. The fader menu reads the levels of all faders in the current fader bank.

If faders or mutes have been organized in groups, each group has a specific letter assigned to it in the square field above the faders (mute groups on top of fader groups). All faders or mutes with the same letter are grouped together. 16 2. CONTROL ELEMENTS AND CONNECTORS Groups can span more than one fader menu page. A second press on the fader bank switches CH 1-16 or CH 17-32 displays the CHANNEL LIB page, where you can save and recall all channel processing settings for the selected channel. To navigate between the two menu pages, either press the corresponding fader bank switch or use the PREVIOUS and NEXT switches to the right of the display. comprise several pages. Use the PREVIOUS and NEXT switches to the right of the display to scroll through the available menu pages (or press the CHANNEL PROCESSING switch several times). The channel processing functions are described in full detail in chapter 3 "DIGITAL CHANNEL PROCESSING". 2.

7.4 General bank 2.7.2 Channel control bank Fig. 2.

21: General bank Fig. 2.19: Channel control bank The channel controller above the fader is always assigned to the same channel as the fader below it, and can be used to control one of nine channel parameters (channel pan, or the send level of one of the four aux or four FX sends). The eleven LEDs surrounding the controller indicate its current position. The parameter assigned to the controller is selected by means of nine dedicated switches located in the switch block in the left console section.

These switches also display the menu page for the selected function. When the function DISPLAY FOLLOWS CHANNEL CONTROL (PREFS page in SETUP menu) is enabled, the first press of the CHANNEL CONTROL switch also displays the associated menu page (send, FX 1-4 or LIB page). When this function is off, the menu page will be displayed only by pressing the CHANNEL CONTROL switch a second time; in this mode, only the channel controller function will be changed. As with all display pages, multiple presses of the CHANNEL CONTROL switch display the available menu pages (which can also be done with the PREVIOUS and NEXT switches to the right of the display). The FADER functions for the rotary control are not available for all channels. For example, the bus outputs have no aux or effect sends, nor do they have a pan parameter. In this case, the LED ring around the controller will be off, and turning the controller will have no effect. Instead, the display will read "FUNCTION NOT AVAILABLE". AUX 1-4 Assigns one of the four aux sends to the channel controllers. FX 1-4 Assigns one of the four FX sends to the channel controllers.

PAN Assigns the channel pan to the channel controller. The channel controller in the MAIN strip exclusively functions as BALANCE control for the stereo mix. However, for this purpose, MAIN CONTROL AS AUX/FX MASTER on the PREFS page in the SETUP menu needs to be deactivated (ex works). These switches access menu pages for various console settings or to activate specific functions. In some cases, several pages are grouped together, and you can scroll through them with the PREVIOUS and NEXT switches or by pressing a GENERAL switch several times. METERS Displays the menu page for controlling the level meters, which are specifically described in chapter 6 "MONITORING AND LEVEL METERS". MONITOR Display the menu page for controlling the monitor speakers via the Control Room monitor output. This switch flashes whenever the signal source assigned to the Control Room output is not the stereo main mix. The monitoring functions are discussed in chapter 6 "MONITORING AND LEVEL METERS". COPY Opens the COPY dialog, in which you can exchange data between single channels.

The COPY parameters are specifically described in chapter 7 "GROUPS, PAIRS AND COPY FUNCTIONS". PAIR Opens the PAIR dialog, in which neighboring channels can be grouped as stereo pairs. Pairing/grouping of channels is discussed in chapter 7 "GROUPS, PAIRS AND COPY FUNCTIONS".

GROUP Opens the GROUP dialog, in which you can organize faders and mutes in groups. The FADER menu shows the current mute and fader groups. Fader and mute groups are specifically described in chapter 7 "GROUPS, PAIRS AND COPY FUNCTIONS". ISOLATE Temporarily disables, or "isolates" all groups, but has no effect on paired channels. The LED in the ISOLATE switch lights up, as long as all groups are disabled. When the ISOLATE switch is engaged, all members from one group can be set independently of each other, for example, to re-adjust the balance between grouped channels. When ISOLATE is turned off, all groups are re-activated, using the new mute and fader positions as link values.

SETUP/OSC Displays the SETUP menu for controlling the parameters word clock, user preferences and oscillator. Details on this can be found in chapter 12 "SETUP". I/O Displays the menu pages for the input/output and multi-output routing, S/PDIF input/output and "dither" for the digital outputs of optional I/O modules. More on these menu pages can be found in chapter 8.2 "I/O Routing". FILES Displays the menu pages for saving, loading and deleting files, and for updating the operating system.



You're reading an excerpt. Click here to read official BEHRINGER  
DDX3216 user guide  
<http://yourpdfguides.com/dref/2300302>

Details on these functions can be found in chapter 9 "FILE MANAGEMENT". MMC/MIDI Displays the menu pages for the MIDI and MMC settings (MIDI Machine Control). For detailed information please read chapter 13 "MIDI CONTROL". 2.

7.3 Proc(ess) bank Fig. 2.20: Proc(ess) bank All input channels as well as the main mix outputs are equipped with a comprehensive set of dynamics and equalization functions. Inputs 1-16 also have delay sections. The signal processing in the selected channel is adjusted by means of on-screen controls. The CHANNEL PROCESSING switches (PROC) display the menu pages for the corresponding functions in the selected channel: EQ, gate, compressor, phase/delay and routing. Many of the CHANNEL PROCESSING menus 2. CONTROL ELEMENTS AND CONNECTORS 17 2.7.

5 Auto(mation) bank 3. DIGITAL CHANNEL PROCESSING Each of the 32 input channels as well as the stereo main mix bus are equipped with a full-featured 4-band EQ and a comprehensive set of dynamics, including a digital compressor/ limiter and gate. The first 16 inputs also have a delay section. All settings for the digital channel processing are stored in the SNAPSHOT AUTOMATION memories, enabling you to load or save an entire mix at any time, including all EQ, dynamics and delay settings. The digital channel processing functions are controlled on screen with the help of the corresponding master controllers.

The EQ, compressor, gate and delay sections have their own menu pages, which can be recalled with the CHANNEL PROCESSING switches (PROC). A library including a variety of factory presets and a convenient store function is available for specific channels and for individual EQ, dynamics and delay sections. Fig. 2.22: Auto(mation) bank In combination with the AUTO/REC switches in the channel strips, the AUTOMATION switches are used to control the dynamic automation of your mixing console.

Please read chapter 11 "DYNAMIC AUTOMATION" for a description of the functions performed by these controls. 3.1 CHANNEL LIBRARIES Use the CHANNEL LIBRARY function to store the complete settings of one channel strip in the form of a single preset. 128 memory locations are available, 40 of which have been filled with factory presets created by professional audio engineers to give you a starting point for a wide range of applications. The channel library stores the compressor, gate, EQ and delay settings of one channel strip, and can be accessed via the FADER menus. Simply press one of the fader bank switches to display the CHANNEL LIBRARY menu for the channel selected with the SELECT switch. Fig. 3.1: CHANNEL LIBRARIES menu In order to load a CHANNEL LIBRARY preset, turn or press the two master controllers below the preset list (SELECT PRESET), until the preset of your choice has been selected, then use the master controller named RECALL. The first 40 memory locations are factory presets that cannot be overwritten.

The remaining memories are for user presets. CURRENT PRESET shows the currently active preset. Press the master controller STORE to store a CHANNEL LIBRARY preset. This will open the STORE CHANNEL PRESET menu. Fig. 3.2: STORE CHANNEL PRESET menu The master controllers below the preset list (STORE TO) determine which preset memory will be used. Edit the preset name with the corresponding controls (master controllers 3-5). Press master controller 3 to delete the name displayed under "STORE AS"; controller 4 determines the cursor position, and controller 5 the character to be entered.

Finally, press ENTER to store your preset, or CANCEL to return to the CHANNEL LIBRARY menu.

Individual library functions are available for the EQ, dynamics and effects section. The operation of these functions is identical to the CHANNEL LIBRARY. 18 3. DIGITAL CHANNEL PROCESSING 3.2 CHANNEL PROCESSING switches Use the CHANNEL PROCESSING switches (PROC) to display the menu pages for the channel processing functions in the selected channel strip (EQ, gate, compressor/limiter, phase/delay or routing).

Many of these menus have more than one page. To scroll through these pages, use the PREVIOUS and NEXT switches or press one of the CHANNEL PROCESSING switches repeatedly. Fig. 3.4: HIGH PASS page in the EQUALIZER menu This menu page has its own A/B and IN/OUT functions, which work independently of those found on the EQ menu page.

The high-pass filter is placed directly after the input, i. e. it is "wired" before the equalizer in the signal path. 3.3 A/B function The processing menus provide an A/B function that helps you compare two different settings. Each time you recall a menu page (selection of a new channel, or coming from another menu page), setting A will always be selected, and both A and B have the same parameter settings. Now, you can edit one of the two pages (A or B) and switch between them to compare their settings. When you quit a menu page (selection of another channel, fader bank or menu page), the settings of the currently inactive page will be erased. 3.4.

3 EQ LIBRARY menu page The EQ LIBRARY menu page offers a selection of EQ presets with descriptive names. Of course, you can name and store your own presets as well. Use the control below the preset list to select a preset, then press RECALL to load it. 3.4 Equalizer 3.4.1 EQ menu page The EQ page of the EQUALIZER menu (which can be accessed by pressing the EQ switch in the switch bank) allows you to edit the powerful equalization functions of your DDX3216. Each channel has a complete, fully parametric 4-band digital EQ with tunable frequency, filter quality (Q) and boost/cut. All bands can be tuned from 20 Hz through 20 kHz and provide a boost/cut of max. 18 dB.

The low band can be configured as a low-cut (LC) or low-shelving filter (LSh), the high band as a high-cut (HC) or high-shelving filter (HSh). Simply press the Q control (master controller 4) once or twice respectively. Pressing this controller a third time will reset the filter to its fully parametric configuration. Fig. 3.

5: LIBRARY page in the EQUALIZER menu Loading an EQ library will change the contents of both the EQ and HIGH PASS menu pages, and overwrite the settings A and B. 3.4.4 EQ parameters Frequency is measured in Hertz (Hz = oscillations or cycles per second). In musical terms, frequency corresponds to pitch, i.

e. the higher the frequency, the higher the pitch. The interval of one octave corresponds to a doubling of frequency. The range of human hearing is from approximately 20 Hz through 20 kHz (= 20,000 Hz). The musical note of middle C corresponds to a frequency of 256 Hertz, the lowest note on a piano is A2 (doublecontra octave), the highest note is c5. The lowest pedal tones of a large church organ are around 20 Hz. Most musical signals consist not only of a single frequency, but of a combination of multiple frequencies. Equalizers allow you to adjust the amplitude relationships between the various frequencies of a specific sound. In combination with the filter quality (Q), the frequency parameters determine which frequency range is processed by the equalizer.



[You're reading an excerpt. Click here to read official BEHRINGER](http://yourpdfguides.com/dref/2300302)

[DDX3216 user guide](http://yourpdfguides.com/dref/2300302)

<http://yourpdfguides.com/dref/2300302>

The *Q* or *QUALITY* parameter controls the filter bandwidth, i.

e. the lower the filter quality, the more frequencies are processed. In order to shape the color of a sound with an EQ, you usually need to use a relatively low filter quality (approx. 0.3 to 2). With a high *Q* value, on the other hand, you can specifically process very narrow frequency bands, for example to remove problematic frequencies or tones, without affecting the remaining frequencies. Additionally, certain special effects can be created. The *GAIN* parameter of a filter determines whether a specific frequency range is emphasized or attenuated. Gain is measured in decibels (dB), a logarithmic unit of measurement that compares two values. Without going into mathematical details here, it should be mentioned though that a boost of 6 dB equals a doubling of amplitude, while an attenuation of 6 dB cuts the amplitude by half.

The gain range of +/- 18 dB provided by the EQs of your DDX3216 means that you can boost or cut a certain frequency range to 8 times its original value. In the bottom band of the EQ, reducing the filter quality beyond its minimum value gives you two further options: low-cut and low-shelf, which are effective on all frequencies below the selected cutoff frequency. Fig. 3.3: EQ page in the EQUALIZER menu Select the band you wish to edit by turning or pressing the left controller.

Then, turn the second controller to adjust the frequency. Press this controller to reset the frequency to its default value. The *GAIN* value (boost/cut) for the selected band can be edited with master controller 3. Press this controller to set the *GAIN* to "0". Controller 4 determines the *Q* factor (filter quality).

Controller 5 controls the A/B function, so that you can easily compare two different settings. The parametric EQ can be switched IN or OUT by turning or pressing the controller located on the far right. When the EQ is switched on, the graphic display on the right gives you a visual indication of the current EQ setting, including the high-pass filter. The broken vertical line shows the center frequency of the currently selected band. When the EQ is out, the graphic will show a flat response. The IN/OUT and A/B functions on this page are effective only on the equalizer of the selected channel. The HIGH PASS menu page has its own A/B and IN/OUT functions. 3.4.2 HIGH PASS menu page In addition to the parametric equalizer, each channel has a dedicated high-pass or low-cut filter, which is controlled on a separate menu page.

The high-pass filter has a slope of 6 dB/oct., and can be tuned from 4 through 400 Hz. It is mainly used to eliminate unwanted low-end noise, such as rumble, microphone handling noise, etc. 3. DIGITAL CHANNEL PROCESSING 19 The low-cut filter has only one frequency parameter, which controls the frequency at which the signal is cut by 3 dB (cutoff frequency). All frequencies below that value are attenuated with a slope of 12 dB per octave. So, when you select a frequency of 100 Hz, it will be cut by 3 dB; at 50 Hz it is 15 dB, and as much as 27 dB at 25 Hz. The low-shelf filter, too, is effective on all frequencies below the selected cutoff frequency, however, here you can also adjust the filter *GAIN*. The cutoff frequency is the frequency at which the filter attenuates or emphasizes the signal by 3 dB. Frequencies below that value are gradually cut or boosted, until the maximum filter attenuation/boost is reached, which depends on the *GAIN* setting.

Normally, it corresponds to a range of one octave above or below the selected cutoff frequency. The top band of the EQ is also equipped with high-cut or highshelf filters, which function like the cut and shelf filters in the low section, with the exception that they process the range above the selected cutoff frequency. after the hold time has passed. Short release times make the gate close faster, but can affect the signal's decay phase. Long release times make the gate close less abruptly.

The release time can be adjusted from 20 ms to 5 s. The *RANGE* is the amount of gain reduction applied when the gate has "closed". Here, the setting range is from 0 (no gain reduction) to -60 dB. "-oo" means maximum gain reduction, i. e.

the audio signal is faded out completely below threshold. The graphic displays on the right are described in chapter 3.5.2 "COMP(RESSOR) menu page". 3.5.2 COMP(RESSOR) menu page The compressor works like a conventional analog compressor, providing gain reduction above the threshold, but offers the flexibility and performance of a digital dynamics processor. Press the COMP(RESSOR) switch in the CHANNEL PROCESSING section of the switch block to display the COMP(RESSOR) menu page for the selected channel. To scroll through the available menu pages, simply press the COMP(RESSOR) switch repeatedly. 3.

5 Dynamics processing Each of the 32 input channels is equipped with a full-featured digital dynamics processor, which also includes compressor/ limiter and gate functions. Similar to the EQ section, you can compare two settings (A and B) on the COMP(PRESSOR) and GATE pages, and use a dynamics library that includes a wide variety of pre-programmed settings with descriptive names. Of course, you can also save and load your own presets. Fig. 3.7: COMP(RESSOR) menu page On the COMP(RESSOR) menu page, master controller 1 controls the key signal, which determines the amount of gain reduction applied. The key signal is used both for the compressor and the gate. The default is SELF/SUM, i. e. the input signal is also the signal used to determine the gain reduction.

When channels are paired (stereo), the dynamics sections of both channels are linked automatically, and their mix signal serves as the key signal for both of them. This is to guarantee an identical gain reduction in both channels and thus a stable stereo image (see chapter 3.5.3 "Compressor parameters"). Master controller 2 adjusts the THRESHOLD and the ATTACK time.

Turn this controller to edit the values of the selected controls (surrounded by a dotted line), or press it to switch to another parameter. Similarly, master controller 3 governs the parameters compression RATIO and RELEASE time. Master controller 4 determines the makeup gain (*GAIN*) as well as the compression characteristic curve at the threshold (*KNEE*). Finally, master controller 5 performs the A/B function (see above), and master controller 6 switches the compressor IN or OUT. The graphic on the right side of the display shows the curves and meters for the entire dynamics processor, including the gate.

Displayed are the compressor characteristic curve based on the adjusted parameters threshold, ratio, knee and gain as well as the gate parameters threshold and range. In particular, the *GAIN* controller can be adjusted conveniently with the graphic display, and also the position of the IN/OUT switches is shown clearly: when the compressor and gate are off, the display shows a 45° straight line (indicating no processing).



**You're reading an excerpt. Click here to read official BEHRINGER**

**[DDX3216 user guide](http://yourpdfguides.com/dref/2300302)**

**<http://yourpdfguides.com/dref/2300302>**